

Amendments to the Claims:

1-30 (Cancelled)

31. (New): An isolated polypeptide comprising a member selected from the group consisting of:
- (a) an amino acid sequence which has at least 85% identity to SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 over the entire length of said sequence; and
 - (b) an immunogenic fragment of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72, wherein the immunogenic fragment has substantially the same immunogenic activity as SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72.
32. (New): The isolated polypeptide of claim 31, wherein the amino acid sequence of (a) has at least 95% identity to SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 over the entire length of said sequence.
33. (New): The isolated polypeptide of claim 31, comprising SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72.
34. (New): The isolated polypeptide of claim 31, consisting of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72.
35. (New): The isolated polypeptide of claim 31, wherein the isolated polypeptide is an immunogenic fragment of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72, wherein the

immunogenic fragment has substantially the same immunogenic activity as SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72.

36. (New): The isolated polypeptide of claim 31, wherein the polypeptide is part of a larger fusion protein.
37. (New): An isolated polynucleotide encoding a polypeptide of claim 31.
38. (New): The isolated polynucleotide of claim 37, wherein the isolated polynucleotide comprises a nucleotide sequence that encodes a polypeptide selected from SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72.
39. (New): An isolated polynucleotide comprising a nucleotide sequence that has at least 85% identity to SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73; or the full complement to said isolated polynucleotide.
40. (New): The isolated polynucleotide of claim 39, wherein the nucleotide sequence has at least 95% identity to SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73.
41. (New): The isolated polynucleotide of claim 39, wherein the isolated polynucleotide comprises SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73.
42. (New): The isolated polynucleotide of claim 39, wherein the isolated polynucleotide consists of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73.

43. (New): An isolated polynucleotide, comprising a nucleotide sequence encoding a polypeptide selected from SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 obtainable by screening an appropriate library under stringent hybridization conditions with a labeled probe having the corresponding DNA sequence of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73, or a fragment thereof.
44. (New): An expression vector or a recombinant live microorganism comprising an isolated polynucleotide according to claim 37.
45. (New): A host cell comprising the expression vector or a subcellular fraction or a membrane of said host cell expressing an isolated polypeptide of claim 31.
46. (New): A process for producing the polypeptide expressed by the host cell of claim 45, comprising culturing the host cell under conditions sufficient for the production of said polypeptide and recovering the polypeptide from the culture medium.
47. (New): A process for expressing a polynucleotide of claim 37, comprising transforming a host cell with the expression vector comprising said polynucleotide and culturing said host cell under conditions sufficient for expression of said polynucleotide.
48. (New): An immunogenic composition comprising an effective amount of the isolated polypeptide of claim 31, and a pharmaceutically effective carrier.
49. (New): The immunogenic composition according to claim 48, wherein said immunogenic composition comprises at least one other non typeable *H. influenzae* antigen.

50. (New): An immunogenic composition comprising an effective amount of the polynucleotide of claim 37.

51. (New): An antibody immunospecific for a polypeptide comprising a member selected from:

- a) an amino acid sequence which has at least 85% identity to SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 over the entire length of said sequence; and
- b) an immunogenic fragment of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72, wherein the immunogenic fragment has substantially the same immunogenic activity as SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72.

52. (New): A method of diagnosing a non typeable *H. influenzae* infection, comprising identifying a polypeptide comprising a member selected from:

- a) an amino acid sequence which has at least 85% identity to SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 over the entire length of said sequence; and
- b) an immunogenic fragment of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72, wherein the immunogenic fragment has substantially the same immunogenic activity as SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72;

or an antibody that is immunospecific for said polypeptide, present within a biological sample from an animal suspected of having such an infection.

53. (New): A method of diagnosing a non typeable *H. influenzae* infection or the presence of non typeable *H. influenzae* in a sample, comprising the step of identifying the stringent hybridisation of a polynucleotide probe comprising at least 15 nucleotides from a polynucleotide selected from SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29,

31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73 to bacterial genomic DNA present within a sample, optionally a biological sample taken from an animal suspected of having a non typeable *H. influenzae* infection.

54. (New): A therapeutic composition useful in treating humans with non typeable *H. influenzae* disease comprising at least one antibody directed against a polypeptide selected from:
- a) an amino acid sequence which has at least 85% identity to SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 over the entire length of said sequence;
 - b) an immunogenic fragment of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72, wherein the immunogenic fragment has substantially the same immunogenic activity as SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72; and,
- a suitable pharmaceutical carrier.
55. (New): A method of generating an immune response in an animal comprising administering an immunogenic composition comprising an immunologically effective amount of a polypeptide selected from:
- (a) an amino acid sequence which has at least 85% identity to SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72 over the entire length of said sequence;
 - (b) an immunogenic fragment of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72, wherein the immunogenic fragment has substantially the same immunogenic activity as SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70 or 72;
- to the animal.

56. (New): A method of generating an immune response in an animal, comprising administering an immunogenic composition comprising an immunologically effective amount of a polynucleotide that has at least 85% identity to SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71 or 73.
57. (New): A mutated ntHi strain, wherein the gene shown in SEQ ID NO:1 has been engineered such that it either expresses its gene product constitutively, or it has been substantially knocked-out so as to switch off functional expression of its gene product.
58. (New): Lipo-oligosaccharide isolated from the mutated ntHi strain of claim 57.
59. (New): A method for preparing an oligosaccharide in vitro comprising the steps of contacting a reaction mixture comprising an activated saccharide residue to an acceptor moiety comprising a further saccharide residue in the presence of the glycosyltransferase having an amino acid sequence of SEQ ID NO:2, or a functionally active fragment thereof.